

What is claimed is:

1. An ink-jet printhead, comprising:
 - a substrate on which an ink chamber to be supplied with ink to be ejected is formed on a front surface of the substrate, a manifold for supplying ink to the ink chamber is formed on a rear surface of the substrate, and an ink passage in communication with the ink chamber and the manifold is formed parallel to the front surface of the substrate;
 - a nozzle plate formed on the front surface of the substrate;
 - a nozzle formed through the nozzle plate through which ink is ejected from the ink chamber;
 - a heater formed on the nozzle plate; and
 - an electrode electrically connected to the heater for applying current to the heater.
2. The printhead as claimed in claim 1, wherein the ink chamber, the manifold, and the ink passage are formed by an etch method.

3. The printhead as claimed in claim 1, wherein the ink passage is formed on a same plane as the ink chamber.

4. The printhead as claimed in claim 1, wherein the ink passage comprises:

an ink channel in communication with the ink chamber; and

a feed hole in communication with the ink channel and the manifold.

5. A method for manufacturing an ink-jet printhead, comprising:
forming a sacrificial layer having a predetermined depth on a front surface of a substrate;

forming a nozzle plate on the front surface of the substrate on which the sacrificial layer is formed, arranging a heater and an electrode electrically connected to the heater on the nozzle plate, and exposing the sacrificial layer by forming a nozzle in the nozzle plate;

forming a manifold on a rear surface of the substrate;

forming an ink chamber and an ink passage by etching the sacrificial layer exposed through the nozzle; and

providing communication between the manifold and the ink passage.

6. The method as claimed in claim 5, wherein forming the sacrificial layer comprises:

forming a groove having a predetermined depth by etching the front surface of the substrate;

forming an oxide layer having a predetermined thickness by oxidizing the front surface of the substrate in which the groove is formed; and

filling a predetermined material in the groove formed in the oxide layer and planarizing the front surface of the substrate.

7. The method as claimed in claim 6, wherein filling the predetermined material in the groove formed in the oxide layer comprises epitaxially growing polysilicon and filling the grown polysilicon in the groove.

8. The method as claimed in claim 6, wherein providing communication between the manifold and the ink passage comprises etching the oxide layer formed between the manifold and the ink passage.

9. The method as claimed in claim 5, wherein forming the sacrificial layer comprises:

forming a trench having a predetermined depth on a silicon on insulator (SOI) substrate; and

filling the trench with a predetermined material.

10. The method as claimed in claim 9, wherein the predetermined material is silicon oxide.